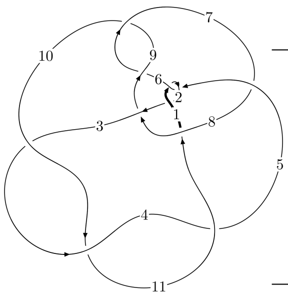
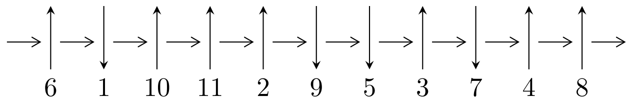
$11a_{151}$ ($K11a_{151}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1,6 \xrightarrow[c_1]{} 2 \xrightarrow[c_2]{} 3,9 \xrightarrow[c_6]{} 7 \xrightarrow[c_9]{} 10 \xrightarrow[c_5]{} 5 \xrightarrow[c_8]{} 8 \xrightarrow[c_{11}]{} 11 \xrightarrow[c_4]{} 4 \twoheadrightarrow c_3, c_7, c_{10}$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle 5.94710 \times 10^{52} u^{65} + 1.17236 \times 10^{53} u^{64} + \cdots + 8.35081 \times 10^{52} b + 2.54635 \times 10^{53},$$
$$-8.47686 \times 10^{52} u^{65} - 1.39894 \times 10^{53} u^{64} + \cdots + 1.19297 \times 10^{52} a - 2.19440 \times 10^{53},\ u^{66} + 2u^{65} + \cdots + 4u -$$
$$I_2^u = \langle u^2 + 7b + 6u + 4,\ -u^2 + a - u - 2,\ u^3 + u^2 + 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 69 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$I_1^u = \langle 5.95\times10^{52}u^{65}+1.17\times10^{53}u^{64}+\cdots+8.35\times10^{52}b+2.55\times10^{53},\ -8.48\times10^{52}u^{65}-1.40\times10^{53}u^{64}+\cdots+1.19\times10^{52}a-2.19\times10^{53},\ u^{66}+2u^{65}+\cdots+4u+1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_3 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$

$$a_9 = \begin{pmatrix}7.10566u^{65}+11.7265u^{64}+\cdots+31.4641u+18.3944\\-0.712158u^{65}-1.40388u^{64}+\cdots-2.74081u-3.04922\end{pmatrix}$$

$$a_7 = \begin{pmatrix}8.72726u^{65}+14.2298u^{64}+\cdots+35.4678u+22.1382\\-2.15625u^{65}-3.59400u^{64}+\cdots-6.93271u-6.34045\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-5.31162u^{65}-8.22686u^{64}+\cdots-15.8436u-12.2934\\3.63832u^{65}+5.58995u^{64}+\cdots+12.4635u+8.35519\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}7.66328u^{65}+12.2341u^{64}+\cdots+30.8189u+18.9851\\-1.32415u^{65}-2.02616u^{64}+\cdots-2.81894u-3.05516\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-8.35519u^{65}-13.0721u^{64}+\cdots-33.0049u-20.9573\\2.39639u^{65}+3.80632u^{64}+\cdots+8.95306u+5.31162\end{pmatrix}$$

$$a_4 = \begin{pmatrix}9.70575u^{65}+15.5979u^{64}+\cdots+36.1966u+23.0110\\-3.81358u^{65}-6.82103u^{64}+\cdots-15.8119u-9.70575\end{pmatrix}$$

$$a_4 = \begin{pmatrix}9.70575u^{65}+15.5979u^{64}+\cdots+36.1966u+23.0110\\-3.81358u^{65}-6.82103u^{64}+\cdots-15.8119u-9.70575\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -8.99978u^{65}-13.8805u^{64}+\cdots-26.7379u-16.3346$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{66} - 2u^{65} + \cdots - 4u + 1$
c_2	$u^{66} + 30u^{65} + \cdots + 2u + 1$
c_3, c_4, c_{10}	$u^{66} - 2u^{65} + \cdots - u^2 - 1$
c_6, c_9	$u^{66} - 4u^{65} + \cdots + 491u - 49$
c_7	$7(7u^{66} - 18u^{65} + \cdots + 13446u - 999)$
c_8	$7(7u^{66} - 10u^{65} + \cdots + 1391u + 241)$
c_{11}	$u^{66} - 5u^{65} + \cdots - 3108u + 392$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{66} + 30y^{65} + \cdots + 2y + 1$
c_2	$y^{66} + 14y^{65} + \cdots + 14y + 1$
c_3, c_4, c_{10}	$y^{66} - 62y^{65} + \cdots + 2y + 1$
c_6, c_9	$y^{66} - 36y^{65} + \cdots - 105155y + 2401$
c_7	$49(49y^{66} + 2434y^{65} + \cdots - 8.20438 \times 10^7 y + 998001)$
c_8	$49(49y^{66} + 880y^{65} + \cdots - 442127y + 58081)$
c_{11}	$y^{66} - 21y^{65} + \cdots - 925904y + 153664$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.886940 + 0.437138I$ $a = -1.43804 + 0.06126I$ $b = 0.278206 - 1.239240I$	$6.34153 + 10.49840I$	$7.22778 - 5.33949I$
$u = -0.886940 - 0.437138I$ $a = -1.43804 - 0.06126I$ $b = 0.278206 + 1.239240I$	$6.34153 - 10.49840I$	$7.22778 + 5.33949I$
$u = 0.900019 + 0.409306I$ $a = 1.287910 + 0.018413I$ $b = -0.259301 - 0.971541I$	$0.06237 - 6.42817I$	$0. + 5.79651I$
$u = 0.900019 - 0.409306I$ $a = 1.287910 - 0.018413I$ $b = -0.259301 + 0.971541I$	$0.06237 + 6.42817I$	$0. - 5.79651I$
$u = -0.301350 + 0.971582I$ $a = 1.01800 + 1.10633I$ $b = -0.559633 + 0.170616I$	$0.012797 + 0.793621I$	0
$u = -0.301350 - 0.971582I$ $a = 1.01800 - 1.10633I$ $b = -0.559633 - 0.170616I$	$0.012797 - 0.793621I$	0
$u = 0.372330 + 0.966152I$ $a = -0.71705 + 1.22172I$ $b = 0.635335 - 0.613059I$	$-4.16615 + 1.29044I$	0
$u = 0.372330 - 0.966152I$ $a = -0.71705 - 1.22172I$ $b = 0.635335 + 0.613059I$	$-4.16615 - 1.29044I$	0
$u = -0.789339 + 0.681407I$ $a = -0.170305 - 0.711151I$ $b = 0.612194 + 0.634929I$	$1.79345 - 2.44057I$	0
$u = -0.789339 - 0.681407I$ $a = -0.170305 + 0.711151I$ $b = 0.612194 - 0.634929I$	$1.79345 + 2.44057I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.893203 + 0.332658I$ $a = -1.067730 + 0.068534I$ $b = 0.060619 - 0.632472I$	$0.93680 + 1.27321I$	$6.69528 - 2.55768I$
$u = -0.893203 - 0.332658I$ $a = -1.067730 - 0.068534I$ $b = 0.060619 + 0.632472I$	$0.93680 - 1.27321I$	$6.69528 + 2.55768I$
$u = 0.010647 + 0.950386I$ $a = 0.878581 + 0.110969I$ $b = 0.018046 + 0.954751I$	$4.00663 + 3.04870I$	$3.98275 - 2.96326I$
$u = 0.010647 - 0.950386I$ $a = 0.878581 - 0.110969I$ $b = 0.018046 - 0.954751I$	$4.00663 - 3.04870I$	$3.98275 + 2.96326I$
$u = 0.861313 + 0.608674I$ $a = 0.420830 - 0.985449I$ $b = -1.035080 + 0.573403I$	$7.36680 + 6.32316I$	0
$u = 0.861313 - 0.608674I$ $a = 0.420830 + 0.985449I$ $b = -1.035080 - 0.573403I$	$7.36680 - 6.32316I$	0
$u = 0.538866 + 0.909098I$ $a = -0.472812 + 0.706075I$ $b = 5.56489 + 0.30058I$	$3.51441 + 1.89915I$	0
$u = 0.538866 - 0.909098I$ $a = -0.472812 - 0.706075I$ $b = 5.56489 - 0.30058I$	$3.51441 - 1.89915I$	0
$u = -0.477372 + 0.943179I$ $a = 0.324367 + 0.983761I$ $b = -1.73724 - 2.48467I$	$-2.01954 - 2.54235I$	0
$u = -0.477372 - 0.943179I$ $a = 0.324367 - 0.983761I$ $b = -1.73724 + 2.48467I$	$-2.01954 + 2.54235I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.706967 + 0.574992I$ $a = -0.344274 - 0.907805I$ $b = -0.497576 + 1.179170I$	$2.68558 - 1.37819I$	$7.68512 + 2.61183I$
$u = 0.706967 - 0.574992I$ $a = -0.344274 + 0.907805I$ $b = -0.497576 - 1.179170I$	$2.68558 + 1.37819I$	$7.68512 - 2.61183I$
$u = -0.742966 + 0.521978I$ $a = 0.391741 - 1.288390I$ $b = 0.73070 + 1.45249I$	$9.13813 + 4.00163I$	$10.02198 - 1.95783I$
$u = -0.742966 - 0.521978I$ $a = 0.391741 + 1.288390I$ $b = 0.73070 - 1.45249I$	$9.13813 - 4.00163I$	$10.02198 + 1.95783I$
$u = -0.422028 + 1.013150I$ $a = 0.42251 + 1.48918I$ $b = -1.47500 - 1.02933I$	$-0.83525 - 3.14253I$	0
$u = -0.422028 - 1.013150I$ $a = 0.42251 - 1.48918I$ $b = -1.47500 + 1.02933I$	$-0.83525 + 3.14253I$	0
$u = 0.490775 + 1.009750I$ $a = 0.050202 + 1.234540I$ $b = 1.73077 - 1.49983I$	$-3.33981 + 4.65284I$	0
$u = 0.490775 - 1.009750I$ $a = 0.050202 - 1.234540I$ $b = 1.73077 + 1.49983I$	$-3.33981 - 4.65284I$	0
$u = 0.496332 + 0.710814I$ $a = -0.254141 + 0.800937I$ $b = 0.81193 + 2.11193I$	$4.10544 + 2.40688I$	$5.61601 - 0.93346I$
$u = 0.496332 - 0.710814I$ $a = -0.254141 - 0.800937I$ $b = 0.81193 - 2.11193I$	$4.10544 - 2.40688I$	$5.61601 + 0.93346I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.386686 + 0.758034I$ $a = 0.593747 + 0.711855I$ $b = 0.586006 + 1.214530I$	$-1.32206 - 1.19867I$	$-0.30232 + 8.95765I$
$u = -0.386686 - 0.758034I$ $a = 0.593747 - 0.711855I$ $b = 0.586006 - 1.214530I$	$-1.32206 + 1.19867I$	$-0.30232 - 8.95765I$
$u = -0.516301 + 1.034960I$ $a = -0.396217 + 1.250800I$ $b = -1.66301 - 1.61916I$	$1.42288 - 7.01342I$	0
$u = -0.516301 - 1.034960I$ $a = -0.396217 - 1.250800I$ $b = -1.66301 + 1.61916I$	$1.42288 + 7.01342I$	0
$u = -0.640786 + 0.965266I$ $a = -0.478037 + 0.069398I$ $b = -0.261638 - 0.444397I$	$0.94099 - 2.93508I$	0
$u = -0.640786 - 0.965266I$ $a = -0.478037 - 0.069398I$ $b = -0.261638 + 0.444397I$	$0.94099 + 2.93508I$	0
$u = 0.747809 + 0.382078I$ $a = 0.982939 + 0.436312I$ $b = 0.605214 - 0.686874I$	$8.51869 + 1.38556I$	$10.68003 - 0.04077I$
$u = 0.747809 - 0.382078I$ $a = 0.982939 - 0.436312I$ $b = 0.605214 + 0.686874I$	$8.51869 - 1.38556I$	$10.68003 + 0.04077I$
$u = 0.612668 + 1.023980I$ $a = 0.794130 + 0.357693I$ $b = 0.395162 - 1.268380I$	$1.33847 + 6.45954I$	0
$u = 0.612668 - 1.023980I$ $a = 0.794130 - 0.357693I$ $b = 0.395162 + 1.268380I$	$1.33847 - 6.45954I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.127139 + 0.784024I$ $a = -0.776775 + 0.573919I$ $b = -0.042614 + 0.780889I$	$-1.72069 - 1.07315I$	$-1.43813 + 5.39557I$
$u = 0.127139 - 0.784024I$ $a = -0.776775 - 0.573919I$ $b = -0.042614 - 0.780889I$	$-1.72069 + 1.07315I$	$-1.43813 - 5.39557I$
$u = -0.618729 + 1.050950I$ $a = -1.057990 + 0.338143I$ $b = -0.12777 - 1.65559I$	$7.56649 - 9.18924I$	0
$u = -0.618729 - 1.050950I$ $a = -1.057990 - 0.338143I$ $b = -0.12777 + 1.65559I$	$7.56649 + 9.18924I$	0
$u = -0.073346 + 1.249270I$ $a = -0.459853 - 0.956008I$ $b = -0.043571 + 0.947032I$	$0.33897 + 7.84486I$	0
$u = -0.073346 - 1.249270I$ $a = -0.459853 + 0.956008I$ $b = -0.043571 - 0.947032I$	$0.33897 - 7.84486I$	0
$u = 0.721856 + 1.027070I$ $a = 0.704898 - 0.295214I$ $b = -0.614618 - 0.468031I$	$6.10958 - 0.48289I$	0
$u = 0.721856 - 1.027070I$ $a = 0.704898 + 0.295214I$ $b = -0.614618 + 0.468031I$	$6.10958 + 0.48289I$	0
$u = 0.564876 + 1.135130I$ $a = -0.073078 - 0.707525I$ $b = -0.58777 + 1.86360I$	$6.26544 + 3.61924I$	0
$u = 0.564876 - 1.135130I$ $a = -0.073078 + 0.707525I$ $b = -0.58777 - 1.86360I$	$6.26544 - 3.61924I$	0

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.104431 + 1.298250I$ $a = 0.292746 - 0.847286I$ $b = -0.003012 + 0.940640I$	$-5.91703 - 3.42293I$	0
$u = 0.104431 - 1.298250I$ $a = 0.292746 + 0.847286I$ $b = -0.003012 - 0.940640I$	$-5.91703 + 3.42293I$	0
$u = -0.648304 + 1.133230I$ $a = -0.040925 - 1.149180I$ $b = 1.78851 + 1.92707I$	$4.2340 - 16.1582I$	0
$u = -0.648304 - 1.133230I$ $a = -0.040925 + 1.149180I$ $b = 1.78851 - 1.92707I$	$4.2340 + 16.1582I$	0
$u = 0.644245 + 1.145510I$ $a = 0.094859 - 1.051470I$ $b = -1.59384 + 1.71257I$	$-2.16297 + 12.09950I$	0
$u = 0.644245 - 1.145510I$ $a = 0.094859 + 1.051470I$ $b = -1.59384 - 1.71257I$	$-2.16297 - 12.09950I$	0
$u = -0.627293 + 1.165180I$ $a = -0.102093 - 0.901979I$ $b = 1.22622 + 1.56395I$	$-1.53699 - 6.84958I$	0
$u = -0.627293 - 1.165180I$ $a = -0.102093 + 0.901979I$ $b = 1.22622 - 1.56395I$	$-1.53699 + 6.84958I$	0
$u = -0.503518 + 0.347045I$ $a = 1.95488 - 0.23615I$ $b = -0.551149 + 1.270420I$	$3.23237 + 2.81118I$	$6.49138 - 3.43190I$
$u = -0.503518 - 0.347045I$ $a = 1.95488 + 0.23615I$ $b = -0.551149 - 1.270420I$	$3.23237 - 2.81118I$	$6.49138 + 3.43190I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.263360 + 1.365470I$ $a = -0.207188 - 0.642987I$ $b = 0.127253 + 0.960247I$	$-4.52691 - 2.53329I$	0
$u = -0.263360 - 1.365470I$ $a = -0.207188 + 0.642987I$ $b = 0.127253 - 0.960247I$	$-4.52691 + 2.53329I$	0
$u = -0.427074$ $a = -0.433828$ $b = -0.336075$	0.801791	12.7100
$u = 0.308392 + 0.295184I$ $a = -2.16318 + 0.94286I$ $b = 0.436188 + 0.731540I$	$-1.70503 - 0.88678I$	$-1.07228 + 2.74548I$
$u = 0.308392 - 0.295184I$ $a = -2.16318 - 0.94286I$ $b = 0.436188 - 0.731540I$	$-1.70503 + 0.88678I$	$-1.07228 - 2.74548I$
$u = -0.407213$ $a = 3.44853$ $b = -1.05852$	1.47039	6.43280

II. $\boldsymbol{I_2^u = \langle u^2 + 7b + 6u + 4,\ -u^2 + a - u - 2,\ u^3 + u^2 + 2u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + u + 2 \\ -\frac{1}{7}u^2 - \frac{6}{7}u - \frac{4}{7} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^2 + u + 2 \\ -\frac{1}{7}u^2 + \frac{1}{7}u - \frac{4}{7} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ -u^2 - u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{4}{7}u^2 + \frac{3}{7}u + \frac{9}{7} \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2 + 1 \\ -u^2 - u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2 + 1 \\ -u^2 - u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{204}{49}u^2 + \frac{517}{49}u + \frac{368}{49}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^3 + u^2 + 2u + 1$
c_2	$u^3 + 3u^2 + 2u - 1$
c_3, c_4	$u^3 + u^2 - 1$
c_5	$u^3 - u^2 + 2u - 1$
c_6	$(u - 1)^3$
c_7	$7(7u^3 + u^2 - 4u + 1)$
c_8	$7(7u^3 - u^2 + u + 1)$
c_9	$(u + 1)^3$
c_{10}	$u^3 - u^2 + 1$
c_{11}	u^3

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^3 + 3y^2 + 2y - 1$
c_2	$y^3 - 5y^2 + 10y - 1$
c_3, c_4, c_{10}	$y^3 - y^2 + 2y - 1$
c_6, c_9	$(y-1)^3$
c_7	$49(49y^3 - 57y^2 + 14y - 1)$
c_8	$49(49y^3 + 13y^2 + 3y - 1)$
c_{11}	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = \quad 0.122561 + 0.744862I$ $b = -0.149595 - 1.040080I$	$-4.66906 - 2.82812I$	$-1.67995 + 11.45076I$
$u = -0.215080 - 1.307140I$ $a = \quad 0.122561 - 0.744862I$ $b = -0.149595 + 1.040080I$	$-4.66906 + 2.82812I$	$-1.67995 - 11.45076I$
$u = -0.569840$ $a = \quad 1.75488$ $b = -0.129382$	-0.531480	2.84970

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2+2u+1)(u^{66}-2u^{65}+\cdots-4u+1)$
c_2	$(u^3+3u^2+2u-1)(u^{66}+30u^{65}+\cdots+2u+1)$
c_3, c_4	$(u^3+u^2-1)(u^{66}-2u^{65}+\cdots-u^2-1)$
c_5	$(u^3-u^2+2u-1)(u^{66}-2u^{65}+\cdots-4u+1)$
c_6	$((u-1)^3)(u^{66}-4u^{65}+\cdots+491u-49)$
c_7	$49(7u^3+u^2-4u+1)(7u^{66}-18u^{65}+\cdots+13446u-999)$
c_8	$49(7u^3-u^2+u+1)(7u^{66}-10u^{65}+\cdots+1391u+241)$
c_9	$((u+1)^3)(u^{66}-4u^{65}+\cdots+491u-49)$
c_{10}	$(u^3-u^2+1)(u^{66}-2u^{65}+\cdots-u^2-1)$
c_{11}	$u^3(u^{66}-5u^{65}+\cdots-3108u+392)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^3+3y^2+2y-1)(y^{66}+30y^{65}+\cdots+2y+1)$
c_2	$(y^3-5y^2+10y-1)(y^{66}+14y^{65}+\cdots+14y+1)$
c_3, c_4, c_{10}	$(y^3-y^2+2y-1)(y^{66}-62y^{65}+\cdots+2y+1)$
c_6, c_9	$((y-1)^3)(y^{66}-36y^{65}+\cdots-105155y+2401)$
c_7	$2401(49y^3-57y^2+14y-1)$ $\cdot(49y^{66}+2434y^{65}+\cdots-82043766y+998001)$
c_8	$2401(49y^3+13y^2+3y-1)$ $\cdot(49y^{66}+880y^{65}+\cdots-442127y+58081)$
c_{11}	$y^3(y^{66}-21y^{65}+\cdots-925904y+153664)$